

## University of Kerala

Department of Physics Kariavattom Campus, Thiruvananthapuram-695581 Kerala

No. Phy/ /2021-2022

08.10.2021

### QUOTATION NOTICE

Quotations are invited for the purchase of following items for research purpose. Kindly quote lowest price for items and the price may include admissible reduction and 5% GST. The items should be delivered at Department of Physics, University of Kerala, Kariavattom, Thiruvananthapuram without any transportation/extra charges.

#### HEAD: CHEMICALS

SI no:	Item	Make	Quantity
1.	Methylammonium Iodide	Sigma Aldrich 901434	10 g
2.	Methylammonium Bromide	Sigma Aldrich 901435	10g
3.	Hydroiodic acid	Sigma Aldrich 210013	250 ml
4.	Hydrobromic acid	Sigma Aldrich 339245	500 ml
5.	Lead (II) iodide	Sigma Aldrich 900168	5g
6.	Lead (II) Iodide	Sigma Aldrich 203602	50g
7.	Methylammonium Chloride	Sigma Aldrich 8.06020	10 g
8.	Oleic acid	Sigma Aldrich O1008	5 g
9.	Oleic acid	Sigma Aldrich 364525	1 L
10.	Toluene anhydrous	Sigma Aldrich 244511	5 L
11.	N,N - Dimethylformamide	Sigma Aldrich 227056	5L
12.	Copper(II) Bromide	Sigma Aldrich 221775	5 g
13.	Copper(II) Chloride	Sigma Aldrich 451665	5 g
14.	Copper(I)Iodide	Sigma Aldrich 215554	5 g
15.	Tin (II) Bromide	Sigma Aldrich 309257	10 g

16.	n- Octylammonium bro- mide	Sigma Aldrich 912638	10g
17.	Dimethyl sulfoxide (DMSO)	Sigma Aldrich 276855	1L
18.	Poly – 3 – hexylthiophene (P3HT)	Sigma Aldrich 510866	5g
19.	Spiro-OMeTAD	Sigma Aldrich 792071	5g
20.	Polyvinylpyrrolidone	Sigma Aldrich 437190	500g
21.	[6,6] – Phenyl C61butyric acid acid methyl ester (PCBM)	Sigma Aldrich 684449	100 mg
20	N,N – DiMethyl Formamide (DMF)	Sigma 227056	10 L
21	Toluene	Sigma 244511	6 L

#### HEAD: CONSUMABLES

S. No	Items	Specification	Quantity/ Number
1	Micro glass slide	• 75 mm × 25 mm × 1.1 mm	10 packets
2	Nitrile Glove	Size - Medium	3 packs of 100 pair
3	Laboratory Mask	<ul style="list-style-type: none"> <li>• 3 Layer Non Woven Fabric</li> <li>• Nose pin</li> <li>• PPE &gt; 93%</li> <li>• BFE &gt; 98%</li> </ul>	3 packs of 50 numbers
4	ITO coated glass substrate	<ul style="list-style-type: none"> <li>• 8-12 Ω/sq</li> <li>• 75 mm × 25 mm × 1.1 mm</li> </ul>	5 packets
5	Soldering station	<ul style="list-style-type: none"> <li>• Iron tip</li> <li>• Iron holder</li> <li>• Temperature controller</li> <li>• Manual</li> </ul>	1
6	Digital Multimeter	<ul style="list-style-type: none"> <li>• Count: 6000</li> <li>• AVG responding; Capacitor: 100.0 μF</li> <li>• Voltage: DC: 600 volts; AC: 600 volts; DC Accuracy: ± 0.5% + 3 digit; AC Accuracy: ± 1% + 3 digit</li> <li>• Resistance: 40 M ohm; Resistance Accuracy: ± 1.5% + 3 digit</li> <li>• Capacitance: 100 μF</li> <li>• CAT III 600 volts safety rated</li> <li>• AC/DC voltage, resistance, capacitance, frequency measurement</li> </ul>	1


**HEAD: EQUIPMENT**

S. No	Items	Specification
1	Source Measurement Unit	<ul style="list-style-type: none"><li>• Device/Component Test fixture</li><li>• Triaxial adapters 2-wire and 4 wire versions</li><li>• 4-quadrant sourcing and measuring capabilities</li><li>• Measurement range: <math>\pm 210</math> V, <math>\pm 3</math> A (DC), <math>\pm 10.5</math> A (pulsed)</li><li>• Measurement Resolution 100 nV, 100 fA, 20 <math>\mu</math>S</li><li>• Kelvin Probe set</li><li>• 5 year calibration package</li><li>• Software and interface cable</li></ul>
2	Spin Coating Unit	<ul style="list-style-type: none"><li>• Bowl Size 8"</li><li>• Rotational Speed 0-9,999 RPM</li><li>• Acceleration/Deceleration</li><li>• Ramp times from 1 to 25 seconds</li><li>• Dwell Time 0 to 999 seconds</li><li>• Dispense Time 10 to 30 seconds</li><li>• Power Input 220 VAC, 50 Hz,</li><li>• Vacuum Input Minimum 17 in Hg / 430 mm Hg;</li><li>• Purge Input 0.55 CFM at 5 psi / 14.15 CLM at 0.35 kg/cm<sup>2</sup> air or nitrogen</li></ul>
3	Weighing Balance	<ul style="list-style-type: none"><li>• Capacity 220g</li><li>• Calibration External</li><li>• Pan Diameter Mm 80 mm</li><li>• Minimum Display 0.1 mg</li></ul>
4	Computer-Workstation	<ul style="list-style-type: none"><li>• 10th Gen Intel® Core™ i5-10400 processor (6-Core, 12M Cache, 2.9GHz to 4.3GHz)</li><li>• 8GB, 8Gx1, DDR4, 2666MHz or Higher</li><li>• 1TB 7200RPM 3.5" SATA HDD or Higher</li><li>• 22" Monitor, wired mouse, Wired Keyboard</li><li>• Intel® Wi-Fi 6 2x2 (Gig+) and Bluetooth 5.0</li><li>• Intel® UHD Graphics 630 with shared graphics memory</li><li>• Dual Boot WINDOWS/LINUX</li><li>• Tray load DVD Drive (Reads and Writes to DVD/CD)</li><li>• EPA chassis with TPM</li><li>• Anti-virus 5 year licence</li></ul>
5	Programmable Temperature controlled base plate	<ul style="list-style-type: none"><li>• Atmospheric heating</li><li>• SS plate with area 15 x 15 cm<sup>2</sup></li><li>• Maximum Temperature 550 °C</li><li>• Temperature Stability <math>\pm 2</math> °C</li></ul>
6	Stirrer with Heater	<ul style="list-style-type: none"><li>• SS base size 6.25 x 6.25 inch</li><li>• Pilot lamp, plug cord,</li><li>• Continuously variable speed regulator.</li><li>• Body made of Mild Steel powder coated</li><li>• Hot Plate in Stainless Steel</li><li>• Heating Temp. range ambient 350 Celsius.</li><li>• 2000 mL capacity</li><li>• Stir Bar.</li><li>• Sturdy base supported with Rubber Vacuum cups</li></ul>

The firms who wish to supply the items are requested to submit the sealed quotations to "Dr. R. Jayakrishnan, Principal Investigator, Associate Professor, Department of Physics, University of Kerala, Kariavattom, Thiruvananthapuram, Pin- 695 581, Kerala" on or before 10.11.2021 by 03:00 pm. The quotations will be opened at 03:00 pm on 11.11.2021 in presence of vendors then present, following COVID19 restrictions imposed by Government. The sealed cover should be super scribed with "Quotation under Ref No \_\_\_\_\_ for item HEAD \_\_\_\_\_ under Serial No. \_\_\_\_\_"

### Conditions

1. Total amount including all charges and taxes should gbe quoted.
2. GST % details should be mentioned (GST No of University: 32AAAJU0328FIZJ)
3. Complaints with the items supplied should be rectified/ replaced to the satisfactions of the university by the suppliers at their own cost.
4. Payment will be made only after the supply of the chemicals at our own site.
5. The undersigned reserves the right to reject/accept any quotation without assigning any reason.
6. All equipment should have 3-year onsite warranty

  
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